Ocean Acidification

The ocean regulates our climate and our weather and is essential for cycling water, carbon, and nutrients. Since the start of the Industrial Revolution, the ocean has absorbed nearly 30 percent of human-generated carbon dioxide from the atmosphere. As ocean water absorbs carbon dioxide, it becomes more acidic. Since the beginning of the Industrial Revolution, the ocean has become approximately 30 percent more acidic, a trend that is projected to continue. This rapid rate of carbon dioxide uptake means that the chemistry of the ocean is changing 10 times faster than at any other time in the past 50 million years.

The Challenges

Such a rapid change in ocean chemistry will likely have broad and significant impacts on marine ecosystems, the services they provide, and the coastal economies that depend on them. Ocean acidification has the potential to undermine dramatically the growth, behavior, and survival of numerous marine organisms, including oysters, clams, urchins, corals, and calcareous plankton. This, in turn, could put the marine food web at risk.

Despite recent efforts to elevate awareness and increase international collaboration on ocean acidification research and observations, much more is required to understand the process of ocean acidification and its impacts. The serious ramifications of ocean acidification for most marine organisms are still largely unknown. Many regions of the world lack monitoring instrumentation and trained personnel to collect the data required to understand this growing problem. In addition, the general public in most nations has little awareness of ocean acidification.

Most significantly, the international community has yet to take enough action to reduce the root cause of ocean acidification – carbon dioxide emissions.

Steps Forward

The Our Ocean Conference will provide an overview of the status of ocean acidification, highlight affected industries such as shellfish farming, and address new and emerging tools for monitoring and adapting to this debilitating trend affecting many critical regions of our ocean. Conference participants will have the opportunity to consider further research and cooperative actions to better understand and address ocean acidification.

An active media outreach effort, including a social media “Call to Action”, is raising public awareness of the need to protect the ocean and give ordinary citizens a way to help out. Private sector and civil society participants will describe initiatives underway to safeguard the ocean’s health, and build bridges that will empower future collaboration. The conference will also provide an opportunity for all stakeholders to discuss and unite behind a set of common sense understandings to protect and

restore the ocean's health that can then be taken forward in the media, civil society initiatives, and diplomatic processes. With respect to ocean acidification, these understandings could include:

- raising awareness about the causes and consequences of ocean acidification by increasing public outreach and education efforts
- increasing international cooperation on research into ocean acidification
- enhancing implementation of the Global Ocean Acidification Observing Network by dramatically expanding the capability to measure and monitor ocean acidification worldwide, including through the development of inexpensive, reliable, rapidly deployable monitoring instrumentation
- developing innovative partnerships to share best practices for adaptation by affected industries and communities, by holding training workshops in key regions and training in-country technicians capable of conducting experimental and monitoring efforts
- protecting particular coastal habitats, including seagrass beds, salt marshes and mangroves that effectively sequester and store carbon
- preventing further ocean acidification by making ambitious reductions in carbon dioxide emissions, including in the context of a new agreement that will be applicable to all under the UN Framework Convention on Climate Change